REMARKS

Claims 1-15 are pending in this application. By this Amendment, claims 1 and 11-15 are amended. No new matter is presented in this Amendment.

The Office Action provisionally rejects claims 1-15 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of copending Application Nos. 10/655,304, 10/667,347, 10/654,432 and 10/657,108. This rejection is respectfully traversed. Applicant hold in abeyance the specific reasons for this traversal, pending the allowance of any of the applications upon which this rejection is based.

The Office Action rejects claims 1-8 and 10 under 35 U.S.C. §102(e) over U.S. Patent No. 6,747,605 to Lebaric et al. ("Lebaric"). This rejection is respectfully traversed.

Independent claim 1 recites, *inter alia*, an antenna, comprising a planar antenna element that is conductive. The Office Action asserts that the half wavelength dipoles 2, 4, 6 and 8 disclosed by Lebaric correspond to a planar antenna element, as recited in claim 1. Applicant respectfully disagrees.

Lebaric discloses, in column 3 - column 4, an antenna that includes two layers of conducting strips, forming half wavelength dipoles, disposed upon opposing sides, sides A and B, of an insulating substrate, where side A is normally grounded. The dipole antenna is well known, comprising two poles, or conductive lines, forming the half wavelength. The dipole elements, 2A, 2B, 4A, 4B, 6A, 6B, 8A and 8B and the feed structures 10 and 12, shown in Fig. 1, form the line elements 2, 4, 6 and 8 disclosed in Fig. 2 of Lebaric. A line is not geometrically equivalent to the planar element recited in claim 1, and Lebaric only discloses, at column 5, line 21, an antenna 1 providing "a low loss line structure. . .."

Furthermore, as discussed above, Lebaric discloses dipole elements 2A, 4A, 6A and 8A on side A of substrate 5 and dipole elements 2B, 4B, 6B and 8B on side B of the substrate 5. Therefore, the dipole elements on side A are on <u>different</u> planes than the antenna elements

on side B. The only "planar" element disclosed by Lebaric, at column 4, lines 18-19, is the insulating substrate 5, which is in direct contradiction to the conductive planar antenna recited in claim 1. Therefore, Lebaric fails to indicate a conductive planar antenna element, as recited in claim 1.

Moreover, the Office Action asserts that the balun 14, disclosed by Lebaric at column 4 lines 50-55, disclose a "ground pattern which is juxtaposed with the planar antenna" wherein the ground portion has a trimmed portion causing to continuously change a distance between the planar antenna element and the ground pattern, as recited in claim 1. Applicant respectfully disagrees.

The balun structure 14, as described by Lebaric at column 4, lines 44-47, is disposed on grounded side A and grounds the electrically connected dipole elements 2A, 4A, 6A and 8A. Therefore, the balun and the dipole elements 2A, 4A, 6A and 8A on side A constitute a ground plane on side A, whereas the radiating dipole elements are on side B. Accordingly, since the ground pattern and the antenna elements are on different planes, Lebaric fails to describe a ground pattern juxtaposed with a planar antenna. Furthermore, since the dipole antenna elements on side A, as well as the balun, form the ground pattern, it would be impossible for Lebaric to suggest that the tapered portions 16 and 18 of the balun function "to continuously change a distance between the planar antenna element and the ground pattern," as recited in claim 1.

Accordingly, since Lebaric does not disclose, teach or suggest each and every feature recited in claim 1, the rejection of claim 1 under 35 U.S.C. §102(e) is improper. Therefore, Applicant respectfully submits that independent claim 1 is patentable over Lebaric. Claims 2-8 and 10 are likewise patentable over Lebaric at least for their dependence on claim 1, as well as for additional features discussed below. Withdrawal of the rejection over Lebaric is respectfully requested.

The Office Action asserts that the tapered portions 16 and 18 of the balun structure 14, of Lebaric disclose a planar antenna element and the ground pattern extending along counter directions, as recited in claim 3. Applicant respectfully disagrees.

As argued above, Lebaric discloses a substrate side A having grounded elements, which include a balun structure and dipole elements 2A, 4A, 6A and 8A. Therefore, the dipole elements on side A form a ground pattern. As there are no other antenna elements on side A, Lebaric does not disclose, teach or suggest a planar antenna element and a ground pattern formed extending along counter directions, as recited in claim 3. Therefore, the rejection of claim 3 under 35 U.S.C. §102(e) is improper.

Claim 8 recites an antenna having a concavity, accommodating a portion for feeding to the feed point, is formed at a tip of the tapered shape. The Office Action does not identify any disclosure in Lebaric of such a concavity, as recited in claim 8. Therefore, the rejection of claim 3 under 35 U.S.C. §102(e) is improper.

The Office Action rejects claims 9, 11-12 under 35 U.S.C. §103(a) over Lebaric in view of U.S. Patent No. 4,816,835 to Abiko et al. ("Abiko"). The Office Action further rejects claims 13-15 under 35 U.S.C. §103(a) over Lebaric in view of U.S. Patent No. 6,707,427 to Knoishi et al. ("Knoishi"). The Office Action acknowledges that the disclosure of Lebaric is lacking and relies on either Abiko or Knoishi to allegedly resolve the deficiencies. These rejections are respectfully traversed.

As argued above with respect to claim 1, Lebaric fails to disclose a conductive planar antenna, a ground pattern juxtaposed with the planar antenna element and wherein the ground pattern has a trimmed portion causing to continuously change a distance between the planar antenna element and the ground pattern. Applicant respectfully submits that Abiko and Knoishi likewise fail to disclose the above-mentioned features.

Furthermore, notwithstanding the lack of explicit or implicit disclosure of all claimed elements in the asserted combined disclosure of Lebaric, Abiko and Knoishi, Applicant respectfully submits that the combination or modification of references cannot render the resultant combination obvious unless the prior art also suggest the desirability of the combination. It is improper to use the claimed invention as an instruction manual to piece together the teachings of the prior art so that the claimed invention is rendered obvious. The Office Action appears to use improper hindsight reconstruction to pick and choose among isolated disclosures. Accordingly, it is respectfully submitted that the combination is improper.

Specifically, in regards to claim 9, the Office Action acknowledges that Lebaric is silent on a ground pattern formed in or on a resin board wherein the dielectric substrate is mounted on the resin board, and relies on Abiko to make up for the deficiencies of Lebaric. The Office Action alleges that motivation is provided in the desire to minimize insertion loss. Applicant respectfully disagrees.

Abiko discloses a planar antenna having first and second power supply circuits which provide power supplies for polarizations in different directions. Specifically, Abiko, at column 2 lines 45-50, suggests how reduction in insertion loss can be achieved using a radiator circuit, power supply circuits and ground conductor member, which are disposed respectively to be independent of one another with a dielectric member disposed between them. Applicant respectfully points out that Abiko, in a manner similar to Lebaric, disposes elements on different sides of a dielectric substrate, which is in direct contradiction to the planar structure recited in claim 9. Thus, it is respectfully submitted that the combination of Lebaric and Abiko is improper, and appears to be based on hindsight reasoning.

In regards to claim 13, the Office Action acknowledges that Lebaric fails to disclose a board on which a dielectric substrate is mounted and in or on which ground pattern is formed

to be juxtaposed with the dielectric substrate, and relies on Knoishi to make up the deficiencies of Lebaric. Similar to the arguments presented above regarding claim 9, it is respectfully submitted that not only is this rejection traversed based upon Knoishi failing to make up for the deficiencies of Lebaric, but this rejection is further traversed on the basis that the combination of Lebaric and Knoishi appears to be based on hindsight reasoning and is therefore improper.

Furthermore, because coupling between the ground pattern and the antenna is very important in this technical field, simple combination of references does not always realize any specifically desired characteristic. The Office Action provides no disclosure to indicate that the tapered shape of the balun structure 14 of Lebaric is effective when the balun structure is formed outside of the insulating substrate 5.

In addition, the Office Action alleges that Figs. 9 and 15 in Knoishi disclose the ground pattern juxtaposed with the dielectric substrate. However, Fig. 9A shows only a chip antenna, Fig. 9B shows only a circuit diagram of an equivalent circuit of the chip antenna shown in Fig. 9A, and Knoishi has no Fig. 15. Therefore, Lebaric in view of Knoishi fails to disclose a ground pattern juxtaposed with the dielectric substrate, as recited in claim 13. Accordingly Applicant submits that claim 13 is patentable over the combination of Lebaric and Knoishi and withdrawal of this rejection is respectfully requested.

The Office Action further asserts that Knoishi discloses, in Fig. 6A, a ground pattern having a region to separate dielectric substrate, as recited in claim 14. Applicant respectfully submits that there is no indication in Knoishi to suggest a plurality of dielectric substrates, and therefore there can be no disclosure or suggestion of separating a first and second dielectric substrate on a board, as recited in claim 14. Therefore, Applicant submits that claim 14 is patentable over the applied references and withdrawal of this rejection is respectfully requested.

The Office Action further asserts that Knoishi discloses, in Fig. 6B and 6C, RF circuitry mounted on a ground pattern, as recited in claim 15. Applicant respectfully submits that the cited figures and the text at column 6, lines 24-28, disclose a circuit equivalent to a ship antenna and does not disclose or suggest any RF circuitry. Therefore, Applicant respectfully submits that claim 14 is patentable over Knoishi. Accordingly, withdrawal of this rejection is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-15 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

James A. Oliff
Registration No. 27,075

Eliot R. Malamud
Registration No. 51,989

JAO:ERM/aaw

Attachment:
Petition for Extension of Time

Date: April 18, 2005

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461